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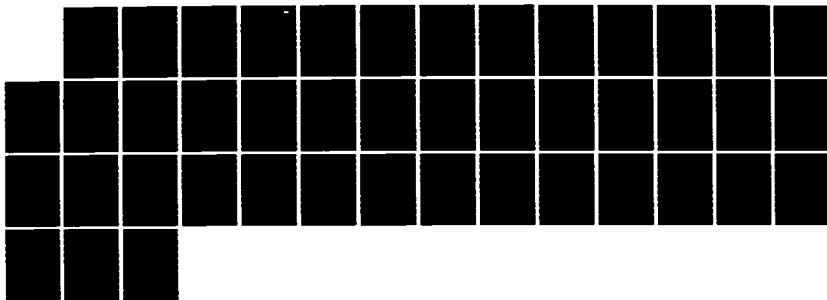
THE ROLE OF CIVILIANS IN MAINTAINING MILITARY EQUIPMENT
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THE ROLE OF CIVILIANS
IN MAINTAINING
MILITARY EQUIPMENT

VOLUME I

January 1986

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PREFACE

This report is published in two volumes. Volume I provides highlights of recent and current uses of civilian mechanics; it also discusses the factors that influence decisions to use civilians and the wartime implications of that use. From this, an assessment of Department of Defense policy is given and recommended management initiatives proposed. Volume II documents the extent to which civilians currently are used to maintain military equipment in the European and Pacific Theaters.

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Executive Summary

THE ROLE OF CIVILIANS IN MAINTAINING MILITARY EQUIPMENT

The use of civilians in the Department of Defense (DoD) to perform equipment maintenance is extensive and, in many situations, essential. They are used at every level of maintenance, both at depots and in the field. Although the DoD has recently taken steps to assure retention of key U.S. civilians overseas in times of crises, it has few assurances that the foreign nationals that it currently uses to perform field maintenance overseas would continue to provide support during wartime. Nor is it assured that any civilian would be willing to deploy to new theaters of operations. The risks are most pronounced in areas of maintenance where civilians have supplanted military mechanics—supporting fixed-site communications equipment, maintaining foreign-manufactured systems and equipment, and repairing components and assemblies in forward support of ground combat forces.

The reasons for using civilian mechanics are varied, yet intertwined: the need for specialized skills to maintain complex equipment, the limit on military personnel strength, the need for continuity and stability, and the pressure to economize. Since these reasons are not likely to disappear soon, the DoD should focus its attention on strengthening its guidance and procedures on using civilian mechanics. Specifically, we recommend that the Assistant Secretary of Defense (Acquisition and Logistics) take the following actions:

- Promulgate clear guidance on the use of civilians to perform field maintenance. The guidance should state that the role of civilians is to augment, not replace, military capability when maintaining mission-essential systems; that when civilian support is necessary, consideration should be given to wartime availability and deployability of the civilians, with preference being given to using DoD civilians and foreign nationals covered by host nation support agreements; and that DoD Components monitor the use of civilians for field maintenance of mission-essential systems. This will provide DoD Components with the necessary direction on using civilians.
- Extend host nation support negotiations—now going on in some countries—to cover foreign nationals (employed by U.S. forces) who perform maintenance in overseas areas and foreign contractors who support foreign-manufactured systems and equipment. This is

necessary to obtain host government assurances that these critical maintenance functions will continue to be performed during wartime.

- Review civilian support planned for new systems to ensure wartime feasibility. This will provide needed oversight, during Integrated Logistic Support planning, of civilian support planned for new systems.

The sophistication of new weapons systems, cost advantages associated with using highly skilled civilians, and ceilings on military personnel combine to create a strong incentive for civilian support. That incentive needs to be tempered with the realization that civilians cannot be compelled to remain during periods of mobilization, redeployment, or hostilities—the circumstances during which mechanics are needed most. Implementation of our recommendations should result in a better balance between the benefits of using civilians to perform field maintenance and the risks of not having military mechanics.

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1. CIVILIAN USE IN SOUTHEAST ASIA

INTRODUCTION

The role of civilians in maintaining military equipment has been changing dramatically in recent years. Once concentrated at depot level, civilians are now being used at all levels of maintenance. They are providing a wide range of services, such as transferring technical skills, operating test equipment, maintaining systems, acting as liaison with manufacturers and support commands, and providing interim support. The broader use of civilian mechanics emerged in Southeast Asia in the 1960's. So in examining the role of civilians in maintaining military equipment we start there, in Vietnam and Thailand. We focus on civilians in long-term assignments, thus excluding the large number and variety of support teams frequently sent from the United States for short periods and the extensive off-shore support provided from the many military bases throughout the Western Pacific.¹

The chapter is organized into a separate section for each of the Military Services, followed by a section that presents factors influencing the role and extent of civilian use in Southeast Asia and a summary section.

ARMY

The Army relied on U.S. and foreign national civilians to support its logistical requirements in Southeast Asia. The civilians included both direct-hire and contractor employees.

The direct-hire employees were mainly Vietnamese local nationals and some Department of the Army civilians (DACs). While the extent of direct-hire employees is not completely known, the Joint Logistics Review Board (JLRB) report gives staffing data for 13 major logistical organizations in the command of U.S. Army, Vietnam. In May 1969, those organizations (while having

¹The information in this chapter is drawn from a report by the Joint Logistics Review Board, Logistic Support in the Vietnam Era, Monograph 13, Maintenance and Monograph 14, Personnel [Washington, D.C.: Assistant Secretary of Defense (Installations and Logistics), 1970].

10,466 military personnel) were augmented by nearly 19,000 civilians, virtually all Vietnamese nationals. The extent to which the civilians were assigned to maintenance tasks, in particular, is not described.

Contract maintenance was used by the Army initially for watercraft and vehicle repair at the general support and depot levels as well as for specific aircraft modifications. Eventually, contractors provided support for many types of equipment: wheeled and tracked vehicles, artillery, heavy engineer equipment, aircraft, avionics equipment, and marine craft. The repair services included end items and components and, in some cases, covered all levels of maintenance, from organizational to depot.

While many contractor personnel supported several logistics functions, data about maintenance do not distinguish combat equipment maintenance from other maintenance, such as for administrative-use equipment or facilities. Thus, although in 1968 nearly 28,000 contractor personnel are reported as supporting maintenance in general, the number actually providing combat equipment support is not specified. In fact, the JLRB report cites only two specific illustrations of the equipment maintenance role for Army contractor personnel: a maintenance battalion at Cam Ranh Bay, Vietnam and aircraft maintenance throughout Vietnam.

At Cam Ranh Bay, an American firm operated four organizational and intermediate maintenance shops. The work encompassed marine maintenance, track and suspension repair, component rebuild, and care and preservation of materiel.

For aircraft maintenance, reliance upon contractor personnel to augment the capabilities of military aviation maintenance units was necessitated by the rapid and expansive buildup of Army aviation in Vietnam. Three U.S. companies performed on-site organizational and intermediate aviation maintenance for several years. Between 1966 and 1970, the companies, as a group, provided an annual average of 1,366 U.S. employees. At its peak in 1969, the contract aviation maintenance manning level reached 2,120 contractor employees.

At first, contract aviation maintenance consisted of specific modifications of aircraft. Later, it included intermediate- and depot-level crash- and battle-damage repairs, especially for airframe,

sheet metal, and electrical work. In time, the contractors became involved in every aspect of intermediate-level aircraft maintenance.

Another facet of Army contract maintenance support was the use of field service representatives to advise and assist units in problem areas during field operations. In the summer of 1969, there were 141 such personnel in Vietnam to support Army aviation.

NAVY

Although the Navy employed a large number of civilians throughout South Vietnam, particularly in construction work, the extent of civilian use for equipment maintenance in Southeast Asia is largely unknown. An indication of the outside limit of equipment support may be shown by data on "construction and maintenance of facilities; repair and overhaul of harbor craft and aircraft." This aggregated work category had nearly 8,600 Navy contractor personnel in Vietnam and Thailand in 1968.

MARINE CORPS

The Marine Corps made only limited use of civilians for logistical services in Vietnam. Contract engineering and technical services (CETS) personnel were employed to advise and assist Marine Corps units in ground communications-electronics systems and aviation equipment. The extent of this support, however, is not delineated in the JLRB report.

AIR FORCE

The Air Force also made use of civilians, including direct-hire U.S. and foreign national civilians and contractor personnel, to support its operations in Southeast Asia. Although the direct-hire civilians were employed in a variety of logistical roles, information about the extent and nature of their maintenance contribution is not reported.

Information about the extent and type of support provided to the Air Force by contractor personnel in Southeast Asia is more complete. Nearly 9,700 contractor personnel supported the Air Force, with 87 percent of those employed in Thailand. The small remainder (less than 1,300 personnel) was in Vietnam. While nearly one-half of the contractor personnel provided security services, a substantial number—about 2,800 personnel, or nearly 30 percent—performed

maintenance. All but 10 percent of the Air Force's contract maintenance effort in Southeast Asia was provided in Thailand.

The Air Force's contract maintenance support was obtained from several sources, including four companies from the United States, two from Japan, and one each from The Philippines and the Republic of China. Those companies concentrated mainly on Inspect and Repair As Necessary (IRAN) work (70 percent of the effort), typically classified as depot-level maintenance. Performance modifications, primarily for reconnaissance aircraft, received the second largest share of contract maintenance support, although this was still a relatively small portion (14 percent) of the total.

The Air Force also used CETS personnel in Southeast Asia. They provided liaison, advice, instruction, and training to military personnel in the installation, operation, and maintenance of Air Force systems and equipment. At its peak in 1968, CETS support of the Air Force numbered 273 personnel in Southeast Asia.

FACTORS INFLUENCING CIVILIAN USE

The rapid, large-scale military buildup in Southeast Asia during the mid-1960's resulted in a commensurately large-scale increase in logistics support requirements. This situation, coupled with military personnel ceilings, necessitated extensive civilian use to supplement the logistics support provided by military units. The military personnel ceilings resulted in inadequate numbers and skills of the military to perform equipment maintenance. According to the JLRB report, the choice to use civilians was influenced almost exclusively by this factor.

Military personnel ceilings were manifest in several ways. For one, the numbers of military personnel permitted deployment to Southeast Asia were controlled directly by the Office of the Secretary of Defense (OSD). Second, the decision not to call up Reserve Components had a limiting effect on the availability of military logistics units, particularly in the Army, but also in the Air Force to a lesser extent. Third, the personnel assignment policies of the Military Services (such as limits on the number and duration of duty tours) affected the availability of personnel. Finally, the OSD decision process for reviewing, modifying, and approving military personnel ceilings lagged behind the actual requirements to the extent that support shortfalls were extended and frequently repeated.

Though these factors mainly limited the numbers of military personnel, they also limited the availability of skills. Skill availability was affected by other factors, as well. One example was the repair of crash- and battle-damaged equipment, notably aircraft and vehicles. In peacetime, such repairs are normally performed by civilians at organic depots. Since there were no repair depots in Southeast Asia, crash- and battle-damage repair became an intermediate-level – and thus a military unit – responsibility. But the military personnel had few crash- and battle-damage repair skills because they had not been generally assigned to depots.

Another example was the inability of the rotational base in the United States to provide quality personnel, a problem that mainly affected the Army. Though the JLRB report states that maintenance skill training for new recruits was generally adequate, many maintenance personnel arrived in Southeast Asia with no "hands-on" experience because there were not enough maintenance positions available in the United States to provide on-the-job training. Two reasons are cited: virtually all intermediate-level maintenance support at Army installations was provided by civilians; and the Army was using extensive contract maintenance support for aircraft at both the organizational and intermediate levels. This practice preempted training opportunities for military personnel, particularly with aircraft and vehicle end-item maintenance and component repair.

Yet another factor affecting skill availability was the combined effect of the rapid buildup and the unavailability of trained units and personnel from the Reserve Components. Since much of the Military Services' contingency planning was predicated on the assumption of a Reserve Component call-up, no alternative support plans were in place.

As a result of these military personnel shortfalls, the recourse was to use civilian personnel, particularly contractors, to fill the need. In the Army, civilian mechanics (especially contractor maintenance personnel) were used to augment military units to perform the more complex repairs, as well as provide some relief for the unavailability of military personnel. Contractors were used in large numbers to augment a few general support aviation maintenance units and in smaller numbers to augment many operating units for both organizational and direct support aviation maintenance. Contractors also augmented military maintenance units in intermediate-level vehicle and component

repair. In the Air Force, contract maintenance was used primarily for IRAN work, which is time-consuming and requires extensive diagnostic and technical experience. In a few cases, Air Force contracts employing local nationals were used for lower skilled tasks to free military repairmen for other work.

On the other hand, the JLRB report notes that direct-hire civilians (excepting U.S. civilians and third country nationals) were used extensively in Southeast Asia for lower skilled jobs. This is best illustrated by the civilian augmentation of Army support organizations whose missions involved many logistics functions, mostly nonmaintenance related. The use of direct-hire civilians for maintenance of equipment, although not illustrated, was probably minimal.

SUMMARY

Many civilians [direct-hire Department of Defense (DoD) and foreign national personnel and contractor employees] were used by the Military Services in Southeast Asia. Though direct-hire civilians mostly supported a variety of logistics functions including construction, facility maintenance, supply, and transportation, civilian support for *equipment maintenance* was drawn largely from contract sources. In the Army, contractors provided field-level support for a wide variety of equipment types, most notably aircraft. In the Air Force, contract support was provided mainly for depot-level IRAN work.

Civilian use in Southeast Asia, especially contract maintenance, was important to the Military Services. Historically, this has been true since World War II, although, as the JLRB report notes, the role of contract maintenance has been changing. Formerly used primarily at the depot level in the United States and as backup support in overseas areas, contractors in Southeast Asia were attached to military maintenance units to augment military skills for the first time.

We now turn our attention to the current use of civilian mechanics, a role very similar to that in Southeast Asia 20 years ago.

2. CURRENT USE OF CIVILIANS

This chapter highlights the current use of civilians for equipment maintenance in the DoD. It is divided into three main sections: civilian category, facet of maintenance, and maintenance level. Each includes examples of how the use of civilians contributes to the performance of maintenance. Citation of an example for one Military Service carries no implications about the extent to which other Military Services use civilians in similar situations. To that end, Volume II is more complete in its portrayal of overseas civilian use by each Military Service. The chapter concludes with a summary.

CIVILIAN CATEGORY

The DoD draws on civilian mechanics from several sources: civil service, foreign national, contract, and host nation support.

Civil Service

The Military Services each use civil service employees (i.e., DoD civilians) in various maintenance roles. For technical assistance, the Army makes extensive use of DoD civilians. They assist units in the field in installing, operating, and maintaining new weapons systems, equipment, and components. Assistance usually takes the form of advice and training but also includes diagnostic help, force modernization planning advice, supply assistance, and direct communications with the wholesale system.

Worldwide, the Army uses 924 DACs for technical assistance. Most of them (510) work in the United States, assigned to 13 posts in the U.S. Army Forces Command (FORSCOM) and 11 posts in the U.S. Army Training and Doctrine Command (TRADOC). Another 342 DACs work in Europe and the balance in the Republic of Korea.

Army technical assistance personnel concentrate on three commodity groups: communications-electronics, missiles, and tank-automotive. Worldwide, nearly 60 percent of the personnel are assigned to these commodities. In Europe, one-half of the personnel are assigned to

communications-electronics and missiles whereas in Korea, one-half are devoted to communications-electronics and tank-automotive.

The Army also has DACs performing direct equipment maintenance in support of combat and combat support units in the United States. Recently, the number of DACs in Installation Materiel Maintenance Activities (IMMAs) at FORSCOM and TRADOC posts totaled nearly 5,800, more than 3,000 of them in FORSCOM.¹

The mission of the IMMAs is to provide maintenance support to the installation's administrative-use equipment and to tactical equipment owned by the combat units stationed there. The latter responsibility generally dominates IMMA production. In this regard, the IMMAs provide direct and general support maintenance of combat and tactical vehicles, armament, construction, aviation, communications-electronics, and other commodities.

Foreign National

Overseas, the Military Services make extensive use of foreign nationals in equipment maintenance. Their roles, as illustrated by the following examples, vary considerably. U.S. Air Forces in Europe installations average approximately 1 to 2 percent civilian augmentation in wing maintenance organizations, which often number more than 1,500 military personnel. In contrast, the Ship Repair Facility (SRF) in Subic Bay, The Philippines, numbers more than 4,400 Filipino nationals out of a total staff of 4,620. Other examples generally lie between these cases.

As one illustration, the Army in Korea employs 663 foreign nationals at the Materiel Support Center-Korea (MSC-K) out of a total staff of 743 for equipment maintenance. MSC-K is the only general support maintenance organization in Korea for ground mobility equipment. No military general support maintenance units are stationed there to support automotive, combat vehicles, armament, construction and engineer, communications-electronics, or general equipment.

Other examples of the use of foreign nationals are related to the support of naval aviation in the Western Pacific. Two organizations at the Naval Air Station (NAS) Cubi Point, The

¹Several TRADOC IMMAs recently have been converted to contract operations.

Philippines, make significant use of foreign nationals. One, the Aircraft Intermediate Maintenance Department (AIMD), employs 92 foreign nationals to augment the aircraft intermediate maintenance capability of military mechanics in three equipment areas: power plants, ground support equipment, and airframes. The other, a detachment of the Fleet Air Western Pacific Repair Activity, employs foreign nationals primarily to perform emergent work although they also perform some scheduled repairs of components. Some employees are organized into teams that are sent routinely to assist with aviation maintenance problems aboard aircraft carriers. This detachment is staffed with a few military supervisors, nine Department of the Navy civilians (DNCs), and 131 foreign nationals.

Another illustration of the use of foreign nationals is the staffing of Army IMMAs in Europe. Although the Army has 59 of them, ranging in size from 3 to 400 personnel, only 18 IMMAs have significant tactical support missions. These are consolidated maintenance centers (CMCs), equipment support activities (ESAs), and theater maintenance centers (TMCs), employing a total of 3,117 foreign nationals.

The CMCs have a total foreign national staffing of 1,616, ranging from 21 to 290 personnel. Five CMCs, comprising two-thirds of total CMC staffing, are in the corps areas. Although specific CMC missions vary, they generally perform direct and general support maintenance of automotive, construction, and communications-electronics equipment. The CMCs in the corps also support the Theater Army Repair Program (TARP).

The ESAs have a total of 695 foreign nationals assigned. The two largest ESAs have missions identical to the CMCs; these two also perform TARP work.

The TMCs—all of them located behind the corps areas—have a total of 806 foreign nationals assigned. The largest of the TMCs (nearly one-half of total TMC staffing) is devoted almost exclusively to general support maintenance of communications-electronics equipment. The other two provide direct and general support maintenance of automotive and combat vehicles; one also supports construction equipment. The TMCs support approximately 20 percent of the TARP workload.

Contract

The Military Services make extensive use of contract support, primarily for direct equipment maintenance, both at home and abroad.

In the United States, the Navy, for example, uses its Commercial Industrial Services (CIS) program to supplement ship repair capacity in major tidewater areas. The objective of this program is to augment intermediate maintenance capacity and reduce fleet working hours at the organizational level by using commercial facilities, personnel, and equipment to accomplish repair work overload. The CIS program operates in seven Atlantic Fleet ports and five in the Pacific Fleet. Though the number of contractor personnel supporting the CIS program is not known, the fiscal year 1985 funding totaled \$76.8 million.

Overseas, the Military Services' use of contract support takes several forms. For one, the Air Force makes extensive use of contractor field teams (CFTs). The concept of these teams is to bring maintenance personnel to the equipment site rather than bring equipment to the contractor's site. Typically, CFTs perform "hands-on" maintenance as well as provide engineering-type support.

In Europe, the Air Force uses CFTs for system modifications and equipment maintenance. The scope of this support encompasses more than 108 contractor employees, at a cost of slightly more than \$6.3 million. The support includes modification and maintenance of F-4 aircraft, completion of time-compliance technical orders on C-130 and F-15 aircraft, and intermediate maintenance of jet engines.

Another form of contract support is the Government-owned, contractor-operated facility. One instance of this type of support provided by a U.S. company is the Area Maintenance Support Facility (AMSF) in the Federal Republic of Germany. The AMSF, which supports the Army's 5th Signal Command, is managed and operated by ITT Federal Electric International, Inc., and uses Army facilities, utilities, tools, test equipment, repair parts, and materials. The AMSF mission is to provide general support maintenance and supply to nontactical fixed communications sites, including those of the Defense Communications System. Other AMSF missions include support of airfields (communications, navigation, and air traffic control equipment) and television sites. The primary

AMSF maintenance facility is in Germany; it has a total of 17 other work centers in Germany and Italy. The AMSF employs 426 contractor personnel, composed principally of United Kingdom and U.S. citizens.

Other forms of overseas contracts include the specific equipment contracts issued by the Air Force in its depot-level program in Europe. They provide for maintenance of a wide range of aircraft, components, and support equipment in the industrial facilities of more than 20 European companies. The total contract effort is more than \$66.3 million and most of the work is performed in the United Kingdom, Spain, Greece, Germany, and Belgium. The F-4 and F-111 aircraft and their components receive the largest share of this type of contract repair. Other aircraft and end items with significant shares are the F-16 aircraft and the J79 engine.

In the Western Pacific, the Navy has major contracts with foreign companies in Japan, the Republic of Korea, and Singapore to support aviation maintenance. Recently, those contracts amounted to approximately \$21 million. The support covers many aircraft types, including the F-4, A-4, A-6, A-7, C-130 and other transport aircraft, as well as rotary-wing aircraft. Depot-level maintenance accounts for most of the contract maintenance effort but a significant amount is applied also to component rework. The man-hours applied to naval aviation maintenance under these major repair contracts translates into an estimated staffing equivalent of 381 personnel.

Host Nation Support

Another source of civilian staffing comes from host nation support.² Host nation personnel provide maintenance support to the Military Services in several ways, including repair and calibration of test, measurement, and diagnostic equipment; repair of ground support equipment (GSE); care and maintenance of equipment in war reserve and prepositioned equipment sites; and, mostly, direct maintenance of a variety of combat equipment.

²For the purpose of this report, the term "host nation support" includes all maintenance support involving some type of commitment or endorsement by foreign governmental or quasi-governmental agencies.

The extent of support provided by host nation personnel ranges from two GSE mechanics in an Air Force tactical airlift group in Japan to the 1,700 ship system repairmen at the Navy's SRF Yokosuka, Japan.

In Europe, host nation personnel support the Army in direct equipment maintenance, care and maintenance of war reserve materiel, and maintenance of equipment in the program known as "Prepositioning of Materiel Configured in Unit Sets" (POMCUS). While the POMCUS work force is predominantly direct-hire foreign nationals in Belgium and Germany, host nation personnel provide POMCUS support in The Netherlands. The latter personnel are Dutch employees of the Netherlands Government under an agreement with the U.S. Government. The Netherlands Government employs 1,194 personnel to receive, store, and maintain POMCUS equipment for the Army at four sites in The Netherlands.

The Marine Corps plans to have host nation personnel support prepositioned equipment, also. The Norwegian Government will provide between 20 and 100 employees to maintain prepositioned Marine Corps combat equipment in Norway.

FACET OF MAINTENANCE

Civilians from all staffing sources are utilized for nearly every facet of maintenance: technical assistance, direct maintenance, operation and maintenance of test and support equipment, and calibration.

Technical Assistance

In fiscal year 1985, the DoD reported 4,325 personnel in technical assistance roles. These personnel are predominantly DoD or contractor civilians. The Army, as noted earlier, almost exclusively uses DACs instead of contractor personnel for technical assistance. The Air Force, on the other hand, draws its technical assistance almost equally from the two sources. For its tactical and airlift forces overseas, however, the Air Force emphasizes the use of CETS. Approximately 80 percent of those technical assistance personnel in Europe are CETS, with the F-16, F-15, and F-111 systems employing more than two-thirds of them.

For newly fielded systems of foreign manufacture, technical assistance can be provided to units in the field by foreign employees of the manufacturer. An example is the support provided the 56th Field Artillery Brigade for the 10-ton transporter truck used for the Pershing II missile. Maschinenfabrik Augsburg-Nürnberg AG (M.A.N.), the truck's German manufacturer, provides a technical representative at each of four Brigade's sites.

The Navy uses civilians for technical assistance on ship systems by assigning CETS and DNC personnel to augment military Mobile Technical Units (MOTUs). These units provide a cadre of skilled technical personnel whose mission is to improve fleet readiness by providing on-the-job training in electronic and weapons system operation and maintenance and technical assistance with repairs. The six MOTUs assigned to the Atlantic Fleet (five in the United States and one in Naples, Italy) have 273 enlisted technicians and 101 civilian technicians, mostly CETS. Radar and communications system expertise lead the list of civilian capabilities. Pacific Fleet MOTUs experience similar circumstances.

Direct Maintenance

Nearly 25,000 civilians are performing maintenance of military equipment in support of the Military Services overseas, divided almost equally between the European and Pacific Theaters. Several thousand more perform maintenance in the United States. The roles of many of these civilians have been highlighted already in earlier presentations in this chapter, such as the 663 foreign nationals at MSC-K. Other examples worthy of a reminder are:

- 3,117 foreign nationals performing direct and general support maintenance at Army IMMAs in Europe
- \$66.3 million in contract depot support of aircraft systems for the Air Force in Europe
- \$76.8 million for repair of ship systems in the United States, under the Navy's CIS program
- 5,798 DACs at IMMAs in the United States
- 4,400 foreign nationals and 1,700 host nation personnel in SRFs in Subic Bay and Yokosuka, respectively
- 381 foreign contractor employees supporting naval aviation in the Western Pacific

- 108 CFT personnel supporting the Air Force in Europe.

The 70th Transportation Battalion, at Mannheim, Germany, provides another illustration. Among its many direct unit support missions, this battalion provides direct aviation intermediate maintenance (AVIM) support for all theater CH-47 and fixed-wing aircraft and backup AVIM support to corps AVIM battalions. While the 70th Transportation Battalion has a variety of aviation logistics support missions, its AVIM mission requires slightly more than 40 percent of its assigned staffing. For this, it uses 98 military personnel, augmented by 161 foreign national civilians. It also receives contract support to augment its maintenance capability for the CH-47. This is provided on site by 63 employees of the Dynalectron Corporation.

Operation and Maintenance of Test/Support Equipment

Civilians often operate or maintain various items of test equipment (such as avionics test stations) or support equipment (such as GSE). Three examples illustrate this.

In the Western Pacific, the Navy has established a GSE Rework Facility at NAS Atsugi, Japan. Here, 50 host nation and 4 DNC personnel perform depot-level rework of powered GSE.

For the Air Force, civilians support test equipment at the Pacific Logistics Support Center, Kadena Air Base, Okinawa, Japan. The center is a military-staffed organization whose mission is to provide intermediate-level maintenance and other logistics support for all tactical aircraft in the Western Pacific. Several civilians are also assigned for administration, supply, direct maintenance, and technical assistance. Still others provide test equipment support. Four contractor employees (three from Northrop Aviation and one from Loral Electro-Optical Systems) operate and maintain the F-15 tactical electronics integrated test equipment station.

Aircraft carriers also make extensive use of CETS personnel to operate and maintain various avionics test stations in the AIMDs.

Calibration

Civilians often provide calibration and maintenance support for test, measurement, and diagnostic equipment and precision measurement equipment. The Navy, for example, has 25 CETS, assigned to seven calibration laboratories at air stations throughout the Western Pacific, to provide

calibration assistance. In addition, the Navy assigns 130 more civilians (mostly DNC or host nation personnel) to six of the same laboratories to perform direct maintenance tasks.

MAINTENANCE LEVEL

Civilians perform repair tasks at every level of maintenance: organizational, intermediate, and depot.

Organizational

Although civilian support at the organizational level of maintenance is not widespread, it does occur in several Army nondivisional units in Korea. There, 141 foreign nationals perform organizational maintenance on vehicles in 12 unit motor pools. The number of personnel assigned to each unit varies considerably. In two battalion-sized engineer units, there are 30 foreign nationals in one and 36 in the other. At the other end of the spectrum, two companies have only two or three foreign nationals each.

Intermediate

The intermediate level of maintenance is the most frequent recipient of civilian support. Examples are numerous, and many were cited earlier – the IMMAs in the United States and Europe, MSC-K, AMSF in Germany, CIS in U.S. tidewater areas, AIMD at NAS Cubi Point, and the 70th Transportation Battalion (AVIM), to repeat a few. SRF Guam provides another example. The three SRFs in the Western Pacific have extensive capacities and capabilities to provide intermediate- and depot-level maintenance support to ships. SRF Guam is essentially no different than the other two, but smaller; it is staffed mostly with Guamanians (800 personnel) who are U.S. citizens and therefore categorized as DNCs.

Depot

In addition to more than 160,000 DoD civilians performing organic depot-level maintenance in the United States, the Military Services also make extensive use of civilians to perform depot-level maintenance overseas. While a few illustrations have already been given to support this point, the prime example is the Mainz Army Depot (MZAD) in Germany.

The mission of MZAD is to provide depot-level maintenance support for combat and tactical vehicles, missile systems, communications-electronics, and other selected items. MZAD also has an extensive backup general support maintenance mission and is a major participant in the TARP, accounting for one-third of the fiscal year 1985 man-hours in that program.

MZAD is a U.S. Government-owned, contractor-operated facility with 5,367 contractor maintenance personnel assigned. Virtually all of them are employees of the primary contractor, a German firm staffed with foreign nationals. A few (nearly 90) are employees of a U.S. company that uses MZAD facilities to perform depot maintenance on the Pershing II missile system. In addition, MZAD production is augmented by 53 off-site subcontractors whose workload translates into the equivalent of an additional 430 foreign national personnel.

SUMMARY

The Military Services make extensive use of civilians for equipment maintenance, both overseas and in the United States. Overseas, 31,418 civilians are currently supporting this function. These are composed of 1,448 technical assistance personnel; 5,329 civilians who maintain pre-positioned equipment and war reserve materiel; and 24,641 other civilians, most of whom perform direct "hands-on" maintenance. The 24,641 civilians include 10,373 personnel (exclusive of host nation support) who primarily perform field maintenance, with the balance mostly supporting depot-level tasks or serving in host nation support roles. In the United States, the number of civilians supporting field maintenance has been at least 8,675 in recent years, with 2,877 personnel providing technical assistance and 5,798 civilians performing maintenance at Army IMMAs. Worldwide, the number of civilians performing field maintenance is more than 16,000, reflecting the more than 10,000 civilians overseas and the nearly 6,000 at Army IMMAs in the United States. Additional civilian support is provided by contract maintenance for which personnel counts were not obtained. This includes more than \$150 million in overseas contract effort and a substantial amount of below-depot contract support in the United States, such as the Navy's \$76.8 million CIS program.

These civilians represent several categories of staffing: DoD civilians, U.S. and foreign contractors, local and third country foreign nationals, and host nation personnel. Civilians in each

category are, for the most part, involved in every facet of maintenance, including technical assistance, direct "hands-on" maintenance of operational equipment and equipment in war reserve, operation and maintenance of test and other support equipment, and calibration. Furthermore, civilians are represented at every level of maintenance, from organizational motor pools to depot-level avionics shops.

The use of civilians is not restricted to certain equipment. They support every type of weapons system, from combat and tactical vehicles to fighter and attack aircraft, from helicopters to submarine and surface ship systems, and from munitions and artillery to bombers and missiles. They also maintain a variety of other equipment, including communications, computers, reconnaissance, intelligence, construction, material handling, and test and support equipment. And, the civilians provide these services in every area of the world where the United States has a military presence.

3. CONTRIBUTING FACTORS

In the preceding chapter we portrayed the role of civilian mechanics worldwide, but gave special emphasis to the support they provide overseas. We now, and for the remainder of the report, direct our attention exclusively to the role of civilian mechanics doing field-level maintenance overseas, because it is they who would be most critical to support of combat forces in war.

The use of civilians for field maintenance overseas is influenced by a number of factors. This chapter discusses briefly how military personnel ceilings, equipment complexity, logistics doctrine, and other factors affect the extent and role of those civilian mechanics.

MILITARY PERSONNEL CEILINGS

The factor singled out most often for using civilian mechanics overseas is the Congressionally mandated ceiling on the number of military personnel permanently stationed abroad. Both Europe and Korea have such ceilings.

Those ceilings have resulted in the Military Services, particularly the Army and Air Force, making very different decisions on their overseas force structures. The Army positions considerably more combat units in both Europe and Korea than it can support with available military personnel. As a result, it must turn to civilian personnel, including contractor, foreign national, and host nation, to make up the shortfall in peacetime support. The Air Force, in contrast, emphasizes a more balanced combat/support force structure overseas, particularly in support of weapons systems. Though also affected by the ceiling, the Air Force has chosen to retain the military integrity of weapons system maintenance units.

The maintenance shortfall apparently imposed by the ceilings has been translated most noticeably into the Army's general support maintenance structure. This is readily evident in the use of civilians to repair components and assemblies in support of ground combat forces and to maintain fixed-site communications and airfield navigation and traffic control equipment.

EQUIPMENT COMPLEXITY

All Military Services have fielded complex equipment whose operational readiness requires outside assistance to military maintenance units. The assistance comes from civilians whose skills and experience are provided in several different forms. One form is the advice and instruction obtained from technical assistance specialists for a wide range and number of complex systems and equipment. Another form of outside assistance, although limited in scope, is interim contract support. This is employed where actual maintenance support is needed to keep newly fielded equipment operational until the training base can provide fully trained military personnel. Equipment in this category includes, for example, the automated test station for the A-10 aircraft and the tactical electronics integrated test equipment for the F-15 aircraft.

For other equipment, such as sophisticated ground communications or reconnaissance equipment, the use of civilians is permanent. Much of the equipment that falls into this category is either of low density or not directly associated with a particular weapons system.

SUPPORT PLAN

The acquisition package for some systems includes a provision that contractor personnel, usually from the original equipment manufacturer, will provide all maintenance support above the organizational level for the life of the system (i.e., total contract support). Such systems include the C-12 operational support aircraft, which is used in both the European and Pacific Theaters, and the C-23A aircraft, which the Air Force recently fielded to support its European Distribution System. Some missile systems also belong in this category. Other examples are found in the high-technology, low-density domain.

Although most of these systems are of U.S. manufacture and supported by the same firms, some are not. Lately, new acquisitions have reflected the advent of a growing number of foreign-manufactured systems that rely on total contract support. Among these are the M.A.N. missile transporter and the Short Brothers C-23A aircraft.

Though total contract support is not widely used, it has become more popular in recent years because it either frees military personnel for combat-related duties or avoids high costs of training

relatively few military personnel. For foreign-manufactured systems, the arrangement also capitalizes on an existing overseas-based support structure.

DOCTRINE

Perhaps the single factor that has the greatest influence on the number of civilians supporting military equipment is the logistics doctrine of the Military Services. Army doctrine, for example, calls for military personnel to repair equipment at forward locations by replacing components, and civilians, operating out of fixed facilities in the rear, to perform most of the actual component repairs. The TARP in Europe, with its extensive dependence upon civilians at MZAD and several other facilities, best illustrates the implementation of this doctrine.

As another example, the Navy uses the SRFs routinely in the Western Pacific to perform intermediate maintenance on deployed ships. Even though the SRFs are technically small shipyards, they have long been assigned extensive intermediate maintenance missions.

CONTINUITY

Another factor frequently singled out as having a major influence on the use of civilian mechanics in overseas areas is the need for "continuity or stability." The complexity and diversity of equipment being supported by military mechanics present a formidable challenge, even under the best of conditions. In some cases, that challenge is even more formidable because personnel assignment opportunities are infrequent (thus, limiting job experiences), tour lengths are short (such as 13-month tours in Korea), and nonmaintenance duties are time-consuming.

One way for military maintenance organizations to function effectively in such situations is to hire civilians. By doing so, the Military Services obtain the continuity and stability in maintenance skills and the added capacity and capability they need. The Navy, for example, has done this in its Western Pacific calibration laboratories, which are staffed with various combinations of contractor, DNC, foreign national, and host nation personnel.

ECONOMICS

Economics is also a factor. Some of the Military Services have found it less expensive to hire local nationals to perform maintenance, especially in Korea and The Philippines, than to require military personnel to perform these tasks.

Economics enters the picture in other ways. For example, some military requirements (such as reconnaissance or intelligence gathering) constantly demand equipment upgrading to capitalize on state-of-the-art changes. In these dynamic situations, it makes economic sense to employ experienced civilians rather than bear the expense of lengthy training programs for military personnel.

SUMMARY

The overall conclusion about the factors contributing to the use of civilian mechanics overseas is clear: no single reason is dominant. The military personnel ceiling certainly influences, for example, the extent to which the Army depends upon civilian mechanics. However, as the Air Force demonstrates, that ceiling does not dictate that weapons system maintenance bear the brunt of any shortfall in military staffing. Furthermore, equipment complexity cannot be singled out because some of the repairs performed by civilians overseas are also performed by military mechanics, either in the same theater or elsewhere. The practice of acquiring systems that are totally contract supported is not widespread, yet far from uncommon. Adherence to logistics doctrine, need for continuity and stability in the maintenance function, and pressure to economize similarly contribute to the overseas use of civilian mechanics. In essence, the current situation is the result of many contributing factors, some of which are interrelated, but none dominates.

4. WARTIME IMPLICATIONS

Chapter 2 of this report has stressed the extent of the Military Services' use of civilians for maintenance in the European and Pacific Theaters. That use is, of course, for peacetime operations. This chapter explores briefly the salient wartime implications of that peacetime use.

The chapter's focus is primarily on field maintenance, i.e., the organizational and intermediate levels. The potential wartime impact of civilian use appears greatest in this area: for the most part, depot-level maintenance, both in the United States and overseas, is an appropriate role for civilians.

The presentation is divided into sections for technical assistance, direct maintenance, and related support. It concludes with a summary.

TECHNICAL ASSISTANCE

All of the Military Services use civilians (DoD civilians or contractor personnel) for advice, assistance, and instruction to military operating units in the installation, operation, and maintenance of new weapons systems, equipment, and components. Assistance usually takes the form of advice and training but also includes diagnostic help, supply assistance, and direct communications with the equipment manufacturer or wholesale system.

The Army's use of civilians for technical assistance is predominantly in support of communications-electronics equipment, although they provide assistance in all commodity areas. For the most part, those civilians are vital to the Army meeting its peacetime readiness objectives and they would be essential in wartime.

The Navy's use of civilian technical assistance is predominantly in support of aircraft. Some of the assistance provided by those civilians includes direct, hands-on operation and maintenance of test equipment. That assistance is particularly important in meeting peacetime readiness objectives and sustaining air operations aboard aircraft carriers in wartime.

Civilian technical assistance in support of ships appears to be most critical to MOTU wartime operations. Although the number of civilians assigned to MOTUs is not large, they have a major role

in correcting mission-degrading weapons system failures in peacetime, a role that can only increase in wartime. Furthermore, the Navy has already determined that these civilians bring skills to the fleet which its enlisted personnel do not have, especially for many communications and radar systems. The wartime implications of using these civilians are clear—they provide maintenance services that are not otherwise available in the fleet.

The Marine Corps has not become as dependent on civilian technical assistance as the other Military Services. Nonetheless, its use of technical assistance, particularly for fighter and attack aircraft and ground communications-electronics systems, is important to peacetime readiness.

Though the Air Force does not make extensive use of civilian technical assistance, it concentrates that support on key weapons systems, such as the F-4, F-15, F-16, and F-111 aircraft. Civilians supporting these systems make important contributions to peacetime readiness; they also would be vital in wartime.

Overall, the use of civilians to provide technical assistance to military operating units is essential. That assistance is important to peacetime readiness as well as wartime sustainability.

DIRECT MAINTENANCE

Army doctrine calls for civilian mechanics, working out of fixed facilities, to perform most major repairs in support of its combat systems, such as tanks, armored personnel carriers, self-propelled artillery, aircraft, missiles, and associated communications-electronics equipment. The observed use of civilians, primarily foreign national and contractor personnel, for direct maintenance in both Europe and Korea, fully implements that doctrine. The wartime implications of that use, however, are far-reaching. Most of those civilians are highly important to combat sustainability. If they are not available, the Army will be forced to rely upon long, tenuous lines of communications to organic depots in the United States, and the associated increased level of replacement equipment and components. Such an alternative may not be feasible given the size, quantity, and importance of the equipment and components being repaired by the civilians.

The Navy's SRFs provide extensive maintenance support of ships, but much of that support is not unique. Other Navy activities, including military-staffed tenders, repair ships, and shore

intermediate maintenance activities, have similar capabilities. The importance of the SRFs to wartime support of ships lies not exclusively in their unique skills and capabilities, but in their size, facilities, and locations, as well. Hence, the SRFs constitute a maintenance capability of immense value to the Navy. Furthermore, the facilities are strategically located in parts of the world where few alternative shore establishments are now available to U.S. forces.

The Navy's use of civilians to maintain ballistic missile submarines has two noteworthy features. First, the services provided by civilian technicians aboard submarine tenders are vital, especially for peacetime readiness. Second, the practice of routinely deploying personnel from U.S. shipyards to the North Atlantic to perform intermediate and depot repairs establishes a strong precedent for civilian support. That support is highly important to readiness, although its implications for wartime sustainability are not clear, primarily because the wartime scenario and role of those submarines will be the dominant factors.

The Marine Corps' dependence on civilian mechanics for direct maintenance is virtually nil. Although some civilians now do vehicle component repair, there are not many, and their absence would probably not affect combat capability.

Since the Air Force stresses that military personnel will perform organizational and intermediate repairs in support of weapons systems, it does not use civilian mechanics extensively at overseas bases. Nevertheless, its interim contractor support personnel make important contributions to readiness. They fill a void in military repair skills and, unless the Air Force plans to replace them with military personnel in wartime, they would be essential to weapons system support.

RELATED SUPPORT

Both the Army and Marine Corps use civilians to maintain war reserve materiel and prepositioned equipment – the Army extensively in Europe, the Marine Corps on a much smaller scale for equipment on maritime prepositioning ships. The Marine Corps also plans on host nation support for prepositioned equipment in Norway. This use of civilians presents no problems in wartime because they are not needed to maintain that equipment during war. Furthermore, though maintenance of equipment in storage is highly important to readiness, the civilians are not even needed to

issue the equipment upon hostilities. Recent exercises have demonstrated that military units can draw their own equipment without civilian assistance. Maintenance of prepositioned equipment and war reserve materiel is undoubtedly an appropriate civilian role.

SUMMARY

The wartime implications of using civilians to maintain military equipment are most critical in the provision of technical assistance and in the performance of direct, hands-on maintenance. In the technical assistance area, the civilians provide weapons system and other technical expertise that, generally, is not possessed by military personnel. During wartime, that expertise would be invaluable. In some areas of direct maintenance, the Military Services have concentrated most, if not all, of the key maintenance skills in the hands of civilians. As a result, those civilians are vital to the wartime sustainability of our combat forces.

In the following chapter, we examine the adequacy of DoD policy on the use of civilian mechanics overall, and during wartime in particular.

5. POLICY ON CIVILIAN USE

This chapter describes DoD policy on the use of civilians, assesses the adequacy of that policy, particularly as it applies to equipment maintenance, and determines the effect of policy on maintenance, especially overseas.

POLICY DESCRIPTION

Policy on civilians is stated in several DoD Directives (DoDDs) and DoD Instructions (DoDIs). For the most part, these are administrative in nature, concerned with such matters as hiring practices, working conditions, labor-management relations, personal and family support privileges, and compensation. However, several nonadministrative DoDDs pertain to the use of civilians. With one exception, these DoD policies can be grouped into two categories. One category prescribes policy on when to use civilians instead of military personnel; the other provides guidance on how civilians are to be used.

DoD policy on when to use civilians is contained in DoDD 1100.4, "Guidance for Manpower Programs," August 20, 1954; DoDD 1100.18, "Wartime Manpower Planning," August 26, 1980; and DoDD 4151.1, "Use of Contractor and DoD Resources for Maintenance of Materiel," July 15, 1982. The purpose of DoDD 1100.4 is to prescribe continuing general manpower policies as a basis for fiscal and end-strength guidance. It states that civilians will be used in positions which do not require military personnel for training, security, rotation, or combat readiness, among other things.¹ The directive further states that indigenous personnel will be used to the maximum extent practicable consistent with security and readiness.

Among the purposes of DoDD 1100.18 is to establish policies on manpower planning during peacetime and manpower utilization during wartime. For peacetime manpower planning, the policy

¹This policy is reiterated in DoDD 1400.5, "DoD Policy for Civilian Personnel," March 21, 1983.

is to use a mix of military and civilian manpower capable of satisfying wartime demands, consistent with the provisions of DoDD 1100.4. For wartime manpower utilization, the directive contains several policy statements, but only a few are germane. These state that the manpower utilization policy during wartime is to:

- Integrate civilians into the military when no source of military manpower with the skills needed in the theater is available. Civilians shall not normally be deployed to a theater of operations.
- Ensure that civilian and contractor personnel performing critical support activities overseas remain in the theater.
- Hire civilians or use contractors to accomplish essential work within the continental United States not requiring military-unique experience.

The most specific guidance on the use of civilians is in DoDD 4151.1. This directive provides extensive guidance to the Military Services on when to use contractor or organic resources for depot-level maintenance. For below-depot-level maintenance, the directive includes a few statements on procedures that can be construed as policy regarding the source of support. According to one statement, intermediate and organizational maintenance support shall be provided, to the maximum extent possible, by DoD Component combat and direct combat support activities. Another statement addresses support of newly introduced weapons systems: "contractor personnel shall be used throughout system operating life if there are shortages in Military Service skilled maintenance personnel and if such contractor personnel shall provide wartime support in a combat zone." The directive further addresses maintenance support for other than combat and direct combat support activities. For this it states, "the source (DoD military or civilian personnel, contractors, or host nation support)" shall be based on:

- The need to maintain a training and rotational base for military technical personnel
- Security implications
- Timely availability of private, commercial sources, or host nation support
- Cost and effectiveness.

DoD policy on how civilians are to be used is provided in two directives: DoDD 1400.6, "DoD Civilian Employees in Overseas Areas," February 15, 1980 and DoDD 1130.2, "Management and

Control of Engineering and Technical Services," January 26, 1983. DoDD 1400.6 establishes the policy for DoD civilian employees in areas outside the continental United States and in Alaska. It states that when using civilians overseas, Military Service commanders shall employ a combination of U.S. citizens and local nationals that blends financial prudence, conformance with host country agreements, availability of qualified local nationals, and a low-key U.S. presence. DoDD 1130.2 provides policy and procedures for management and reporting of engineering and technical services. It establishes that DoD Components use those services to assist in new system introductions and transfer of technical knowledge. It also prescribes criteria and limitations on their use.

The exception to the two categories of civilian policy described above is DoDD 1404.10, "Retention of Emergency-Essential (E-E) DoD Civilian Employees," May 31, 1985. That directive prescribes policy "... to ensure the continued performance of emergency-essential DoD civilian positions overseas during crisis situations. ..." To encourage those civilians to stay on the job, the directive authorizes several benefits:

- Evacuation of their dependents with the same priority accorded military dependents
- Award of danger pay allowance
- Issuance of Geneva Convention Identity Cards.

The directive also requires DoD Components to identify emergency-essential positions, obtain signed agreements from incumbents that they will continue to perform their duties during crises, and report the extent of dependence upon emergency-essential civilians and the impact if they do not sign the agreement.

The DoD is also preparing to promulgate another directive with a thrust similar to that of DoDD 1404.10, but with a focus on U.S. contractor employees. The objective will be to assure that contractors who are providing critical services now will continue to provide those services during crises.

POLICY ASSESSMENT

DoD policy on the use of civilians, in general, is unclear and incomplete. The policy is unclear, for example, when it directs the DoD Components to use a combination of military and civilian

personnel capable of satisfying wartime demands (DoDD 1100.8). It is also unclear where, on the one hand, it espouses the use of civilians for certain positions (DoDD 1100.4) but, on the other, states that civilians will not normally be deployed to a theater of operations (DoDD 1100.18). This is further compounded when policy (DoDD 1100.4) seeks to "maximize the use of local nationals" (i.e., overseas indigenous personnel) and "during wartime, integrate civilians into the military to fill needed skills in the theater" (DoDD 1100.18).

Policy on the use of civilians for equipment maintenance is also incomplete and not explicit. Though DoDD 1130.2 specifies criteria and some limits on the use of civilians for engineering and technical services, other facets of maintenance and definitions of other civilian maintenance roles are not similarly addressed in any DoDD or DoDI. DoDD 4151.1 may imply that certain maintenance support is to be provided by military units by using terms such as "combat and direct combat support activities." But, these terms are not defined and subject to different interpretations by the Military Services because they are primarily Army terms. In another part of this directive, the presentation on source of support lacks the clarity necessary to be effective.

DoDD 1404.10 and its companion draft directive on U.S. contractor personnel are needed first steps in assuring that critical emergency-essential U.S. civilians overseas will continue to provide support during crises. But, these categories of civilians constitute only a small portion of total civilian support overseas. Other categories, such as foreign nationals and foreign contractor personnel, are not covered by those directives. Furthermore, neither directive addresses the issue of assuring that civilians will deploy to new theaters of operations; both assume that hostilities will occur only where the civilians are currently engaged.

EFFECT OF POLICY

Overall DoD policy on the use of civilians in general, and for maintenance in particular, has little effect on DoD Component operations, except for two areas: the use of contractor or organic resources for U.S. depot-level maintenance and the use of engineering and technical services. Otherwise, there is no policy impact.

This conclusion is substantiated by the wide-ranging dependence on civilians in the Military Services' overseas operations. Civilian use aboard most Navy ships (aircraft carriers excepted) is minimal when it occurs, but mostly nonexistent. The Air Force's use of civilians to augment wing maintenance organizations is also minimal—1 to 2 percent of total staffing. On the other hand, the Army's use of civilians to repair components and assemblies in forward support of ground combat forces approaches complete dependence. From such widely ranging emphasis on civilian support of combatant forces, one can only conclude that the DoD lacks a complete and fully effective policy on the role of civilians in maintenance.

6. RECOMMENDED ACTIONS.

SYNOPSIS

The DoD's use of civilians for equipment maintenance is not new. DoD, foreign national, and contractor civilians were used extensively in Southeast Asia; substantial contract maintenance has routinely been required for support of newly fielded weapons systems. And, more than 160,000 DoD civilians work at organic maintenance depots in the United States. For the most part, the use of civilians for field maintenance traditionally has been to supplement military capability. Under some circumstances, however, they have brought skills that were otherwise not available within the Military Services.

Now, the Military Services use more than 31,000 civilians, including DoD, U.S. and foreign contractor, local and third country foreign national, and host nation, just to maintain forward-deployed equipment. Civilians support all facets of maintenance, including technical assistance, direct "hands-on" maintenance of operational equipment and equipment in war reserve, operation and maintenance of test and other support equipment, and calibration. They perform at every level of maintenance from organizational motor pools to depot-level avionics shops. They support all types of weapons systems from combat and tactical vehicles to fighter and attack aircraft. They also maintain a variety of other equipment including communications, computers, material handling, and test equipment. And, they provide these services in every area of the world where the United States has a military presence.

The reasons for using civilians are numerous and varied. They include the need for specialized skills to maintain complex equipment, the limit on military personnel strength, the desire to establish a depot maintenance capability overseas, the need for continuity and stability, the requirement to maintain prepositioned equipment, and the pressure to reduce peacetime support costs.

Overall DoD policy on the use of civilians in general, and for maintenance in particular, is unclear and incomplete. Explicit guidance is provided in just two areas: the use of contractor and

organic resources for depot maintenance in the United States and the use of engineering and technical services. Furthermore, efforts to assure support during crises are focused only on U.S. civilians. They do not address such categories of civilians as overseas direct-hire and contractor foreign nationals, who currently perform much of the maintenance most needed in wartime.

CONCLUSIONS AND RECOMMENDATIONS

The DoD needs to develop an overall strategy on the role of civilians in maintaining military equipment.

In some areas, such as performing depot maintenance in the United States and overseas, providing technical assistance, maintaining war reserve and prepositioned materiel, and performing weapons system modifications in the field, civilian use is unquestionably appropriate. In other areas, such as supporting fixed-site communications equipment and repairing components and assemblies in forward support of ground combat forces, however, the DoD is incurring unnecessary risks by concentrating most, if not all, of the key field maintenance skills in the hands of civilians. While the DoD has recently taken steps to assure retention of key U.S. civilians overseas in times of crises, it has few assurances that the foreign nationals would continue to provide support in the event of war or that any civilians would be willing to deploy to new theaters of operations. If these civilians do not stay or refuse to deploy, then the sustainability of our forces would be seriously jeopardized. The risks associated with using civilians in these areas must be reduced.

The Military Services need to monitor more closely the extent to which they use civilians, both U.S. and foreign nationals, for field maintenance of mission-essential systems.

As a result of DoDD 1130.2, the Military Services have visibility of their civilian use for engineering and technical services. Other facets of maintenance require a similar degree of oversight. For example, many maintenance contracts are let by program managers and are, therefore, visible to the overseas commands only on an exception basis. Since many civilian personnel are critical to peacetime readiness objectives and vital to wartime operations, the using commands need to routinely monitor the extent of their dependence upon those civilians and, thereby, the potential maintenance shortfall in wartime.

The Military Services need to place increased emphasis on wartime feasibility in determining whether to use military or civilian mechanics to support specific systems and equipment. Currently, the reasons for using civilians instead of military mechanics are numerous and intertwined. Some are related to equipment complexity, others to personnel ceilings and peacetime support costs. In some situations, these and other reasons predominate, with insufficient consideration given to wartime feasibility. These priorities need to be reversed.

As an important step toward correcting these and other shortcomings, we recommend that the Assistant Secretary of Defense (Acquisition and Logistics), [ASD(A&L)], promulgate clear guidance on the use of civilians to perform field maintenance. The guidance should state that the role of civilians is to augment, not replace, military capability when maintaining mission-essential systems and equipment; that when civilian support is necessary, consideration be given to wartime availability and deployability of civilians, with preference to using DoD civilians and foreign nationals covered by host nation support agreements; and that DoD Components monitor the use of civilians for maintenance of mission-essential systems and equipment.

This guidance will establish that performance of field maintenance is primarily a military unit responsibility; that civilian support is permitted, even encouraged, under specific circumstances; and that monitoring the use of civilians for maintenance is a DoD Component responsibility.

We also recommend that the ASD(A&L) extend host nation support negotiations, already ongoing in some countries, to cover foreign nationals (employed by U.S. forces) who perform maintenance in overseas areas and foreign contractors who support foreign-manufactured systems and equipment. This is necessary to obtain host government assurances that these critical maintenance functions will continue to be performed in wartime.

The preceding actions are oriented toward minimizing the risks associated with the current use of civilian mechanics. They need to be supplemented with a corresponding emphasis on new systems and equipment. We believe the best way to provide that emphasis is for the ASD(A&L) to focus on the wartime feasibility of planned civilian support in its review of maintenance plans for new system

acquisitions. This will provide needed oversight, during Integrated Logistic Support planning, of civilian support planned for new systems.

Each of the above actions is aimed at minimizing or managing the risks of using civilians to perform field maintenance in forward areas, not at reducing the requirements for such support. The reasons for civilian support are numerous and intertwined—military personnel ceilings, complex equipment, personnel rotation policies, and economics, to name a few. We believe that the ASD(A&L) needs to address both the management issues associated with using civilians—issuance of policy, extension of host nation support negotiations, and assurance of wartime feasibility of civilian support planned for new systems—and the underlying reasons, as well. Reducing the requirements for civilian maintenance support in forward areas will require continuing participation from many organizations over a long term. To accomplish this, we recommend that the ASD(A&L) initiate concerted staff dialogue and coordination on civilian mechanic use, involving representatives from several disciplines (including personnel, training, logistics) and organizations (OSD, Military Departments, and major using commands). The dialogue should be oriented toward developing a long-term strategy on the role of civilians in forward, field maintenance and specific actions to assure that their usage is appropriate. This initiative will supplement and reinforce the proposed management initiatives.

POSTSCRIPT

The use of civilian mechanics to support military equipment is a complex issue. The sophistication of new weapons systems, cost advantages associated with using highly skilled civilians, and ceilings on military personnel combine to create a strong incentive for civilian support. That incentive needs to be tempered, however, with the realization that civilians cannot be compelled to remain during periods of mobilization, redeployment, or hostilities—the circumstances during which mechanics are needed most. Implementation of the preceding recommendations constitutes appropriate OSD initiatives toward minimizing the risks of using civilians to perform field maintenance. The objective should be the establishment of clear guidelines on the types of field maintenance tasks to be performed by civilians and those to be performed by military personnel. Such guidelines should

be based upon effective and feasible maintenance support in wartime, while minimizing the cost of peacetime readiness.

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<p>This report examines the role of civilians (DoD civilians, contractors, foreign nationals, and host nation personnel) in the maintenance of military equipment, particularly in overseas areas. The examination describes the extent to which the DoD uses civilian mechanics, assesses the implications of that usage, and proposes several actions to strengthen the role of civilians in maintaining DoD equipment.</p> <p>Volume I of this report provides highlights of recent and current uses of civilian mechanics; it also discusses the factors that influence decisions to use civilians and the wartime implications of their use. From this an assessment of DoD policy is given and recommended management initiatives proposed.</p> <p>Volume II describes the extent to which civilians currently are used to maintain military equipment in the European and Pacific Theaters. The descriptions include the number of civilians, the equipment they support, and their locations.</p>					
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22a. NAME OF RESPONSIBLE INDIVIDUAL			22b. TELEPHONE (Include Area Code)		22c. OFFICE SYMBOL

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DTIC

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